

CLAIMS

I/We claim:

1. An anchor assembly, comprising:

a plurality of individual article engaging portions, each having opposite first and second ends, and wherein the individual portions are pivotally mounted at the opposite ends thereof to the adjacent portion, and wherein the individual portions are moveable along a course of travel between a first non-deployed position where the plurality of individual portions cause the anchor assembly to have a first dimension, and a second deployed position where the individual portions cause the anchor assembly to have a second dimension which is greater than the first dimension.

2. An anchor assembly as claimed in claim 1, and further comprising:

a support member having a first end which is operable to be coupled to a load which exerts force on the support member, and an opposite second end, and wherein at least one of the plurality of individual article engaging portions is rotatably mounted on the second end.

3. An anchor assembly as claimed in 2, and further comprising:

a biasing member which is borne on the second end of the support member and which forcibly acts upon the individual portions to move the individual portions from the first non-deployed position to the second, deployed position.

4. An anchor assembly as claimed in claim 3, and wherein the plurality of article engaging portions comprise first, second and third article engaging portions, and wherein each of the article engaging portions have opposite first and second ends, and outwardly facing and inwardly facing peripheral edges, and wherein the first end of the first article engaging member is rotatably mounted on the second end of the support member, and wherein the biasing member is mounted in force transmitting relation relative thereto, and wherein the second end of the first article engaging member is rotatably mounted on the first end of the second article engaging member, and wherein the second end of the second article engaging member is mounted on the first end of the third article engaging portion, and wherein in the second deployed position the inwardly facing peripheral edges of the second and third article engaging portions lie in juxtaposed force transmitting relation relative to the inside peripheral edge of the first article engaging portion, and the outwardly facing peripheral edges of the first, second and third article engaging portions form a substantially continuous arcuately shaped surface, and wherein in the second deployed position the respective first, second and third article engaging portions resist the load which is applied to the first end of the support member.

5. An anchor assembly as claimed in claim 4, and further comprising:

a force application assembly moveably borne by the support member and located intermediate the opposite first and second ends thereof; and

a linkage having a first end mounted on the force application assembly, and an opposite second end which is affixed on the third article engaging portion, and wherein the application of a force to the force application assembly causes the force application

assembly to move along the support member and transmit the force, by way of the linkage, to the first, second and third article engaging portions, and wherein the application of the force to the force application assembly causes the respective article engaging portions to move from the second deployed position towards the first non deployed position, and wherein upon the removal of the force applied to the force application assembly the biasing member is operable to move the respective article engaging portions from the first non deployed position in the direction of the second deployed position.

6. An anchor assembly as claimed in claim 5, and wherein the plurality article engaging portions comprise a first element which is rotatably mounted on the second end of the support member, and wherein the anchor assembly further comprises:

a second element which is rotatably mounted on the second end of the support member and which is further disposed in force receiving relation relative to the force application assembly, and wherein the application of force applied by way of the force application assembly causes the second element to counter-rotate relative to the first element, and wherein the biasing member is mounted between the first and second elements and disposed in force transmitting relation relative to the second element.

7. An anchor assembly, comprising:
a support member having a first end, and an opposite second end;
a first article engaging portion having a first end which is rotatably mounted on the second end of the support member, and an opposite second end; and

a second article engaging portion having a first end which is pivotally mounted on the second end of the first article engaging member and an opposite second end, and wherein the respective article engaging portions each have an outwardly facing, and an inwardly facing peripheral edge, and wherein the individual portions are moveable between a first position, wherein the individual outwardly facing peripheral edges of the individual portions define substantially discrete arcuately shaped surfaces, and the inwardly facing peripheral edges are disposed in spaced relation, one relative to the other, and a second position, wherein the outwardly facing portions of the individual portions define a substantially continuous arcuately shaped surface, and the inwardly facing surfaces of the respective article engaging portions lie in juxtaposed force transmitting relation, one relative to another.

8. An anchor assembly as claimed in claim 7, and wherein in the second position the substantially arcuately shaped surfaces defined by the individual article engaging portions collectively define a substantially continuous arcuately shaped surface which forms a substantially logarithmic spiral.

9. An anchor assembly as claimed in claim 7, and further comprising:

a third article engaging portion having a first end which is rotatably mounted on the second end of the second article engaging portion, and which has an inwardly and an outwardly facing peripheral edge, and wherein the outwardly facing peripheral edge of the third article engaging portion forms a substantially continuous arcuately shaped surface along with the first and second article engaging portions when located in the second position.

10. An anchor assembly as claimed in claim 9, and further comprising:

a biasing member borne on the second end of the support member and which forcibly acts upon the first article engaging member to bias the first, second and third article engaging members in the direction of the second position.

11. An anchor assembly as claimed in claim 9, and wherein the respective first, second, and third article engaging portions have opposite sides, and wherein an axle is borne on the second end of the support member, and further defines an axis of rotation, and wherein the first article engaging portion has first, second and third apertures formed therein, and which extend between the opposite sides, and wherein the first aperture is formed in the first end thereof, and is operable to receive the axle therethrough, and wherein the second aperture is operable to receive and be forcibly engaged by the biasing member, and wherein the third aperture receives a first shaft, and wherein the inwardly facing peripheral edge of the first article engaging portion is undulating.

12. An anchor assembly as claimed in claim 11, and wherein the second article engaging portion has first and second apertures formed therein, and which extend between the opposite sides, and wherein the first aperture is formed in the first end of the second article engaging portion, and wherein the first aperture is operable to rotatably receive the first shaft which is borne on the second end of the first article engaging portion, and wherein a movement limiting area is formed in one of the sides of the second article engaging portion at the first end thereof, the movement limiting area limiting the rotational movement of the second article engaging portion relative to the

first article engaging portion, and wherein the second aperture is formed in the second end of the second article engaging portion, and is operable to receive a second shaft, and wherein the inwardly facing peripheral edge of the second article engaging portion is undulating, and wherein the undulating inside peripheral edge of the second article engaging portion matingly cooperates with the undulating inside peripheral edge of the first article engaging portion when the respective article engaging portions are in the second position.

13. An anchor assembly as claimed in claim 12, and wherein the third article engaging portion has a first aperture formed therein and which extends between the opposite sides, and wherein the first aperture is formed in the first end of the third article engaging portion, and is operable to receive the second shaft which is borne on the second end of the second article engaging portion, and wherein a movement limiting area is formed in one of the sides of the third article engaging portion and at the first end thereof, the movement limiting area limiting the rotational movement of the third article engaging portion relative to the second article engaging portion, and wherein the inside peripheral edge of the third article engaging portion is undulating and further matingly cooperates with the undulating inside peripheral edge of the first article engaging portion when the respective article engaging portions are in the second position.

14. An anchor assembly as claimed in claim 13, and further comprising:
a force application assembly slideably borne by the support member; and
a linkage having a first end mounted on the force application assembly, and an opposite second end which is affixed on the third article engagement portion, and wherein a force applied to the force application assembly is transmitted to the first, second, and third article engaging portions to move them from the second position in the direction of the first position, and wherein the release of the force applied to the force application assembly permits the biasing member to move the respective first, second and third article engaging portions from the first position in the direction of the second position.

15. An anchor assembly, comprising:
a support member having opposite first and second ends;
a first article engaging portion having a first end which is rotatably mounted on the second end of the support member, and wherein the first article engaging portion rotates in a first, and an opposite, second direction;
a biasing member borne on the second end of the support member and which forceably acts upon the first article engaging portion to cause the first article engaging portion to rotate in the first direction;
a second article engaging portion having a first end which is pivotally mounted to the second end of the first article engaging portion, and an opposite second end;
a third article engaging portion having a first end which is pivotally mounted to the second end of the second article engaging portion and an opposite second end;

a linkage having a first end which is mounted on the third article engaging portion, and further having an opposite second end; and

a force application assembly slideably cooperating with the support member, and wherein the second end of the linkage is mounted on the force application assembly, and wherein the application of force to the force application assembly has the effect of moving the first, second and third article engaging portions along a course of travel between a deployed position, to a non-deployed position, and wherein the application of force further causes the first article engaging portion to rotate in the second direction, and wherein the removal of the force applied to the force application assembly permits the biasing assembly to rotate the first article engaging portion in the first direction.

16. An anchor assembly as claimed in claim 15, and further comprising:

an aperture formed in the third article engaging portion, and wherein the linkage is affixed in the aperture.

17. An anchor assembly as claimed in claim 16, and wherein the force application assembly is moveable along a course of travel between a first position, where the force application assembly and the linkage cause the respective article engaging members to move into the non-deployed position where the second and third article engaging members are disposed along, and in adjacent relation relative to, the support member, to a second position which permits the respective article engaging portions to move to the second deployed position, and wherein the force application assembly and linkage substantially restrains the respective article engaging members

from moving beyond the second deployed position when a force is applied to the first end of the support member.

18. An anchor assembly as claimed in claim 17, and wherein in the non-deployed position the anchor assembly has a first width dimension, and wherein in the deployed position the anchor assembly has a width dimension greater than the non-deployed position.

19. An anchor assembly as claimed in claim 17, and wherein an axle is mounted on the second end of the support member and extends substantially normally outwardly therefrom, and wherein the first article engaging portion is rotatably mounted on the axle, and wherein each of the article engaging portions have an inside peripheral edge, and wherein the inside peripheral edges of the second and third article engaging portions matingly cooperate with the first article engaging portion when the respective article engaging portions are in the deployed position to transmit force applied to the first end of the support member substantially uniformly to the respective article engaging portions.

20. An anchor assembly as claimed in claim 19, and wherein the first, second and third article engaging members when located in the deployed position form a first segmented cam lobe, and wherein the anchor assembly further comprises a second segmented cam lobe which is rotatably mounted on the axle, and wherein the first and second segmented cam lobes are disposed in spaced relation, on relative to the other, and wherein the respective segmented cam lobes counter rotate one relative to the

other, and wherein the biasing member is positioned between the respective segmented cam lobes and forcibly acts upon each to bias the respective segmented cam lobes into the deployed position.

21. An anchor assembly comprising:

a support member which is operable to be coupled to a load; and

a camming lobe rotatably mounted on the support member, and which has a plurality of moveable portions.

22. An anchor assembly as claimed in claim 21, and wherein a plurality of portions include first, second and third article engaging portions.

23. An anchor assembly as claimed in claim 22, and further comprising:

a force application assembly slideably borne by the support member; and

a linkage mounted on the force application assembly and coupled in force transmitting relation relative to the third camming lobe, and wherein the application of force to the force application assembly causes the first, second and third camming lobes to move from a deployed position to a non-deployed position.

24. An anchor assembly as claimed in claim 23, and wherein each of the article engaging portions have an inside peripheral edge, and wherein in the non-deployed position each of the inside peripheral edges of the respective article engaging portions are disposed in spaced relation, one relative to the others, and wherein in the deployed position, the inside peripheral edges of the second and third article engaging portions lie in juxtaposed relation relative to the inside peripheral edge of the first article engaging portions.

25. An anchor assembly as claimed in claim 24, and wherein the first article engaging portion is rotatably mounted on the support member, the second article engaging portion is rotatably mounted to the first article engaging portion, and the third article engaging portion is rotatably mounted to the second article engaging portion.